

**Notice of Allowability**

Application No.

10/075,962

Applicant(s)

BENNETT ET AL.

Examiner

Art Unit

DANIEL G. MARIAM

2625

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address--

All claims being allowable, PROSECUTION ON THE MERITS IS (OR REMAINS) CLOSED in this application. If not included herewith (or previously mailed), a Notice of Allowance (PTOL-85) or other appropriate communication will be mailed in due course. **THIS NOTICE OF ALLOWABILITY IS NOT A GRANT OF PATENT RIGHTS.** This application is subject to withdrawal from issue at the initiative of the Office or upon petition by the applicant. See 37 CFR 1.313 and MPEP 1308.

1. ☒ This communication is responsive to a telephone interview dated September 21, 2005.
2. ☒ The allowed claim(s) is/are 1-61.
3. ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some\* c) ☐ None of the:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - ☐ Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

\* Certified copies not received: \_\_\_\_\_.

Applicant has THREE MONTHS FROM THE "MAILING DATE" of this communication to file a reply complying with the requirements noted below. Failure to timely comply will result in ABANDONMENT of this application.

**THIS THREE-MONTH PERIOD IS NOT EXTENDABLE.**

4. ☐ A SUBSTITUTE OATH OR DECLARATION must be submitted. Note the attached EXAMINER'S AMENDMENT or NOTICE OF INFORMAL PATENT APPLICATION (PTO-152) which gives reason(s) why the oath or declaration is deficient.
5. ☒ CORRECTED DRAWINGS (as "replacement sheets") must be submitted.
- (a) ☐ including changes required by the Notice of Draftsperson's Patent Drawing Review (PTO-948) attached
- 1) ☐ hereto or 2) ☐ to Paper No./Mail Date \_\_\_\_\_.
- (b) ☒ including changes required by the attached Examiner's Amendment / Comment or in the Office action of Paper No./Mail Date 09212005.
- Identifying indicia such as the application number (see 37 CFR 1.84(c)) should be written on the drawings in the front (not the back) of each sheet. Replacement sheet(s) should be labeled as such in the header according to 37 CFR 1.121(d).
6. ☐ DEPOSIT OF and/or INFORMATION about the deposit of BIOLOGICAL MATERIAL must be submitted. Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL.

**Attachment(s)**

- ☒ Notice of References Cited (PTO-892)
- ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- ☒ Information Disclosure Statements (PTO-1449 or PTO/SB/08), Paper No./Mail Date 9/13/05 & 8/5/02
- ☐ Examiner's Comment Regarding Requirement for Deposit of Biological Material
- ☐ Notice of Informal Patent Application (PTO-152)
- ☒ Interview Summary (PTO-413), Paper No./Mail Date 9/21/2005.
- ☒ Examiner's Amendment/Comment
- ☒ Examiner's Statement of Reasons for Allowance
- ☐ Other \_\_\_\_\_

**DANIEL MARIAM**  
**PRIMARY EXAMINER**

## **EXAMINER'S AMENDMENT, DRAWINGS, AND REASONS FOR ALLOWANCE**

### **Drawings**

1. Figures 1 and 2 should be designated by a legend such as --Prior Art-- because only that which is old is illustrated. See MPEP § 608.02(g). Corrected drawings in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. The replacement sheet(s) should be labeled "Replacement Sheet" in the page header (as per 37 CFR 1.84(c)) so as not to obstruct any portion of the drawing figures. If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

### **Examiner's Amendment**

2. An examiner's amendment to the record appears below. Should the changes and/or additions be unacceptable to applicant, an amendment may be filed as provided by 37 CFR 1.312. To ensure consideration of such an amendment, it MUST be submitted no later than the payment of the issue fee.

### **Specification**

#### Amend the specification as follows:

In page 1, line 6, before "by" insert "(US Patent No. 6,534,669)" - -

In page 1, line 8, before "by" insert "(US Patent No. 6,336,108)" - -

In page 28, line 25, before "which" insert "(US Patent No. 6,529,891)" - -

Authorization for the following examiner's amendment was given in a telephone interview with Jeffrey R. Sadlowski (Registration No. 47,914) on September 21, 2005.

The application has been amended as follows:

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Amend claim 1 as follows:

At line 6, after the limitation “character” insert “, the probabilities employed for inferring parts of handwriting” - -

At line 12, delete “an” and replace it with “a first” - -

At line 19, delete “an” and replace it with “a second” - -

Amend claim 57 as follows:

At line 4, after the limitation “character” insert “, the probabilities employed for inferring parts of handwriting” - -

At line 9, after the limitation “states” insert “, the common hidden variable is a common external hidden variable not included in any of the HSBNs” - -

Amend claim 61 as follows:

At lines 1-2, delete the limitation “the common hidden variable is a common external hidden variable not included in any of the HSBNs, ” - -

**Reasons for Allowance**

3. Claims 1-61 are allowed.
4. The following is an examiner’s statement of reasons for allowance: the instant invention recognizes handwritten data by using an encoder for encoding probabilities of observing sets of visual observations for a predetermined character, the encoder consists of a plurality of modelers for modeling a hypothesis that a common hidden variable corresponding to a handwritten character associated with the encoder is in a respective one of a plurality of discrete states. Each of the modelers contains a plurality of storage units for storing probability parameters that define relationships between visual features of the handwritten character. Each of the modelers further

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includes an accumulator for accumulating outputs from the storages and providing outputs of each respective of the respective modeler to produce a corresponding output of each respective encoder indicative of the probability that an input visual observation corresponds to the handwritten character defined by the common hidden variable. The instant invention further discloses, among other things, the use of mixtures of Bayesian networks for handwriting recognition. These Mixtures of Bayesian Networks (MBNs) encode the probabilities of the visual observations associated with handwritten character. Each of the MBNs is associated with a common hidden variable, which can be an external common hidden variable. Each of the MBNs consists of a plurality of hypothesis-specific Bayesian networks (HSBNS) that model a hypothesis that the common hidden variable corresponding to a handwritten character is in a respective one of a plurality of discrete states, and the common external hidden variable is not included in any of the HSBNs. These features and in combination with all of the other elements of the claims are not disclosed or fairly suggested by any of the prior art of records.

Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

### ***Conclusion***


5. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. US Patent No. 5,737,724, and a publication to: Pan, et al. "Fuzzy Bayesian networks- A general formalism for representation, inference and learning with hybrid Bayesian networks", and Luttrell "An adaptive Bayesian network for low-level image processing".

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Any inquiry concerning this communication or earlier communications from the examiner should be directed to DANIEL G. MARIAM whose telephone number is 571-272-7394. The examiner can normally be reached on M-F (7:00-4:30) FIRST FRIDAY OFF.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, BHAVESH M. MEHTA can be reached on 571-272-7453. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

  
DANIEL G MARIAM  
Primary Examiner  
Art Unit 2625

September 21, 2005